

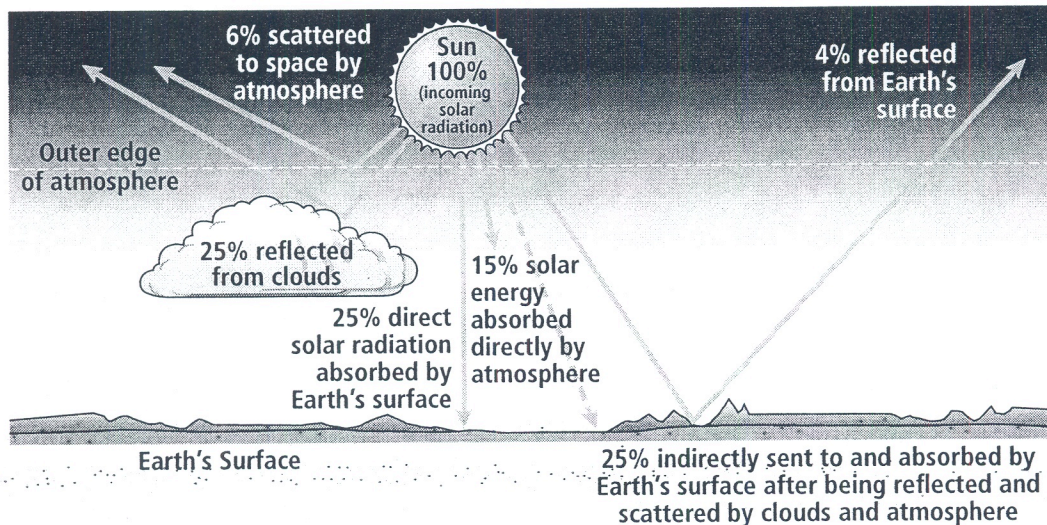
CHAPTER

11

STUDY GUIDE FOR CONTENT MASTERY

SECTION 11.1 *Atmospheric Basics, continued*

In your textbook, read about how the atmosphere is heated.
Examine the diagram below. Then answer the questions.



11. What is the source of all energy that reaches Earth? _____

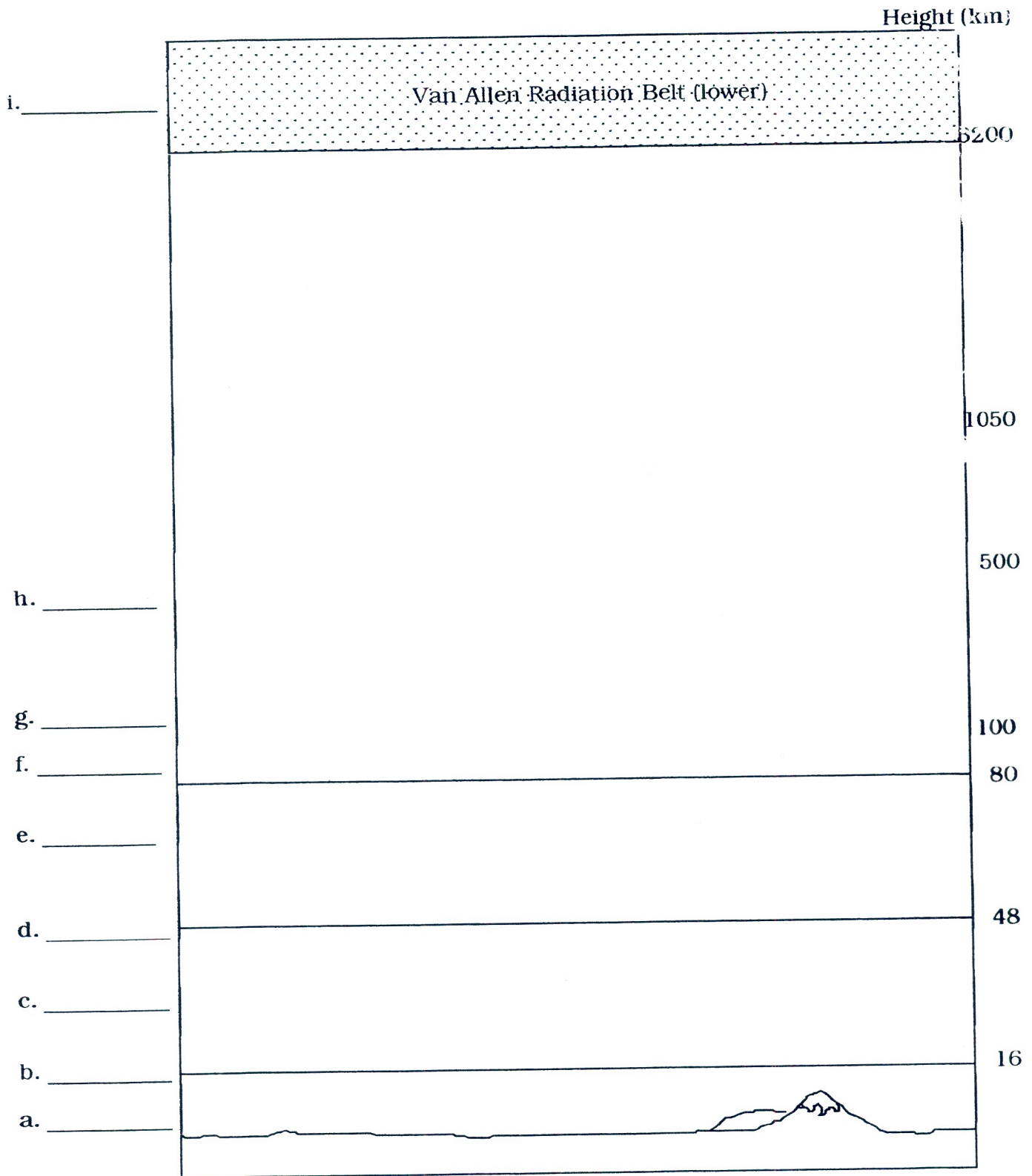
12. What percentage of the Sun's energy does Earth's surface absorb directly or indirectly? _____

13. What percentage of the Sun's energy is scattered or reflected back into space? What causes this loss of solar energy?

14. Earth's surface is heated by energy from the Sun. For the most part, the rereleased energy from the surface heats the atmosphere. Describe the method by which energy is transferred from Earth's surface to the air above it.

15. Describe convection.

Layers of the Atmosphere



Layers of the Atmosphere

Name _____ Block _____

Directions:

1. Label each layer.

a	*Troposphere	0-16 km	
	b Tropopause		16 km
c	*Stratosphere	17-48 km	
	d Stratopause		48 km
e	*Mesosphere	49 - 80 km	
	f Mesopause		80 km
g	*{Thermosphere}	81 - ?? km	
	h Ionosphere		96 - 112 km
i	*Exosphere	beyond 600 km	

2. Sketch symbols of the characteristics of the atmosphere onto the correct layers.

Aurora Borealis	80 - 500 km	Meteors	80 - 500 km
Jet Airplane Travel	<6 km	Cumulonimbus Clouds	16+ km
Cirrus Clouds	16 km	Manned Balloon	48 km
Flock of Geese	8.1 km	NASA spacecraft	240 km
Mt. Everest	12 km	Radio Waves	1050 km
Ozone Layer	20 - 30 km	Coldest region	82 km
Where you live	0 km	Where most satellites orbit	>600 km

Questions:

1. List the four main layers of the atmosphere and calculate their thicknesses:

2. Which is the thickest? _____ Thinnest? _____

3. Look at the troposphere. The _____

SECTION 3

Reinforcement

Air Movement

Directions: Write the term that matches each description below in the spaces provided. Unscramble the letters in the boxes to write a phrase related to the lesson. Use your textbook as a reference.

1. Caused by the uneven heating of Earth and its atmosphere

____ ____

2. Imaginary line around the middle of Earth

3. Windless zone at the equator which sailing vessels try to avoid

____ ____

4. Winds generally responsible for the movement of weather across the United States and Canada

____ _____

5. Winds that provide a dependable route for trade

____ _____

6. Cool breezes during the day caused by differences in heating and cooling rates of land and water

____ _____

7. Narrow belts of strong winds at high altitudes which blow near the top of the troposphere

____ ____

8. Cool breezes at night caused by differences in heating and cooling rates of land and water

____ ____

9. Heat from the Sun

____ ____

10. The deflection of air masses resulting from Earth's eastward rotation

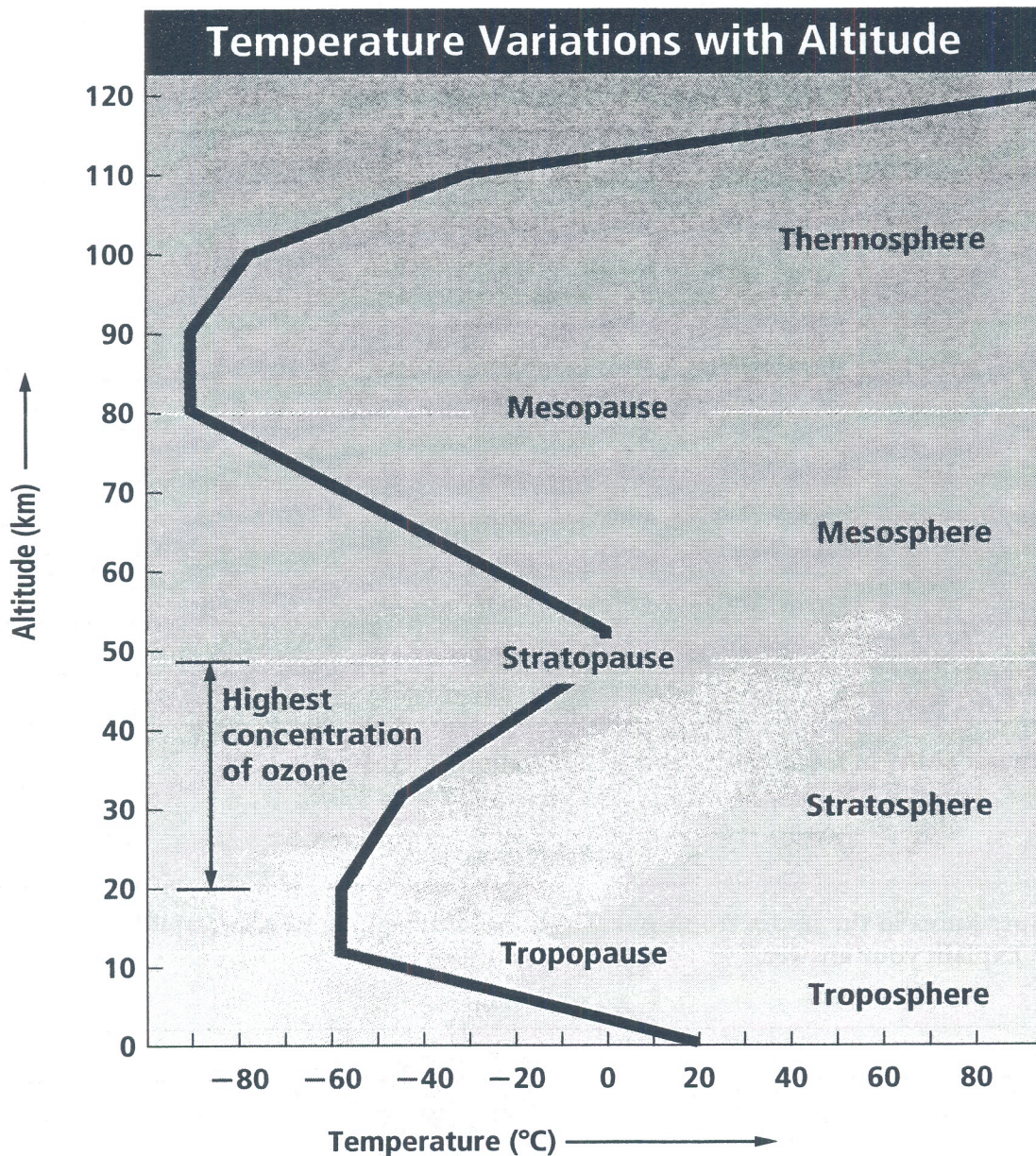
____ ____

11. Winds that blow from the North and South Poles

____ ____

12. The phrase is: _____

Temperature Changes in the Atmosphere



Temperature Changes in the Atmosphere

1. How does temperature change with altitude in the troposphere?

2. How does temperature change with altitude in the stratosphere?

3. Contrast how temperature changes with altitude in the stratosphere and mesosphere.

4. Is the temperature profile in the thermosphere more like that of the troposphere or the stratosphere? Explain your answer.

5. Where do major shifts in temperature occur in the atmosphere?

6. Would temperatures in the upper troposphere and the stratosphere be comfortable for people? Explain your answer.
